

WHAT IS CLAIMED IS:

1. A septic tank and system for pumping liquid from the septic tank as effluent to a drain field comprising:

5 a pump for drawing liquid from the septic tank and pumping the liquid as effluent to the drain field;

a strainer for straining certain particulate matter from the liquid before the liquid enters the pump;

10 the strainer comprising a straining screen through which the pump draws the liquid for limiting the size of particulate matter that can pass to the pump;

15 at least one nozzle that receives some of the effluent being pumped by the pump and that is aimed toward the screen for directing effluent toward the screen to dislodge particulate matter from an area of the screen while the pump draws liquid through the screen;

20 wherein the screen and nozzle are arranged for relative movement so that the area of the screen being acted on by the effluent from the nozzle changes as the pump operates.

2. A septic tank and system as set forth in Claim 1 including a pump vault disposed within the tank, and wherein the pump is disposed within the vault.

25 3. A septic tank and system as set forth in Claim 2 wherein the vault comprises a wall having an opening through which liquid in the septic tank enters the vault.

30 4. A septic tank and system as set forth in Claim 3 wherein the vault comprises a closed bottom wall and a cylindrical side wall extending upright from the bottom wall, the opening comprises a series of holes in the side

wall spaced above the bottom wall, and the strainer is disposed within the vault below the level of the series of holes.

5           5. A septic tank and system as set forth in Claim 4 wherein the strainer and the pump are disposed side-by-side within the vault.

10           6. A septic tank and system as set forth in Claim 5 wherein the strainer and the pump comprise respective vertical walled housings that are connected by a horizontal tube through which liquid that has been strained by the strainer passes to the pump.

15           7. A septic tank and system as set forth in Claim 6 wherein the screen is stationarily mounted in the walled housing of the strainer and the nozzle is disposed within the walled housing of the strainer and arranged to move relative to the screen.

20           8. A septic tank and system as set forth in Claim 3 wherein the vault wall encloses the vault such that liquid in the septic tank is constrained to enter the vault through the opening, and the strainer is disposed in covering  
25 relation to the opening.

          9. A septic tank and system as set forth in Claim 8 wherein the vault wall includes a horizontal wall that contains the opening, and the strainer is disposed on the  
30 exterior of the vault in covering relation to the opening.

10. A septic tank and system as set forth in Claim 9 wherein the horizontal vault wall that contains the opening is a bottom wall of the vault.

5 11. A septic tank and system as set forth in Claim 9 wherein the horizontal vault wall that contains the opening is a top wall of the vault.

10 12. A septic tank and system as set forth in Claim 8 wherein the strainer screen is mounted on the vault wall in covering relation to the opening in the vault wall, and the nozzle is disposed within the vault.

15 13. A septic tank and system as set forth in Claim 12 wherein the strainer screen is stationarily mounted on the vault wall in covering relation to the opening in the vault wall, and the nozzle is arranged to move relative to the screen.

20 14. A septic tank and system as set forth in Claim 13 wherein the vault wall includes a vertical wall that contains the opening.

25 15. A septic tank and system as set forth in Claim 1 wherein the strainer and the pump are disposed side-by-side within the septic tank, and the screen is spaced vertically above a bottom wall of the tank.

30 16. A septic tank and system as set forth in Claim 15 wherein the strainer and the pump comprise respective vertical walled housings that are connected by a horizontal

tube through which liquid that has been strained by the strainer passes to the pump.

17. A septic tank and system as set forth in Claim 16  
5 wherein the screen is stationarily mounted in the walled housing of the strainer and the nozzle is disposed within the walled housing of the strainer and arranged to move relative to the screen.

10 18. A septic tank and system as set forth in Claim 16 wherein the horizontal tube is disposed vertically above the screen.

15 19. A septic tank and system as set forth in Claim 16 wherein the horizontal tube is disposed vertically below the screen.

20 20. A septic tank and system as set forth in Claim 15 wherein the septic tank comprises a top cover containing an opening that provides access into the tank, and the pump and strainer comprise a unit having an overall lateral dimension that allows them to pass into and out of the tank through the opening.

25 21. A septic tank and system as set forth in Claim 20 wherein the unit includes a switch tree for controlling operation of the pump to cause an intermediate zone of liquid in the tank to have the same level as that of the screen.

30 22. A system for use in pumping liquid from a septic tank as effluent to a drain field comprising:

a pump for drawing liquid from the septic tank and pumping the liquid as effluent to the drain field;

a strainer for straining certain particulate matter from the liquid before the liquid enters the pump;

5 the strainer comprising a straining screen through which the pump draws the liquid;

at least one nozzle that receives some of the effluent being pumped by the pump and that is aimed toward the screen for directing effluent toward the screen to dislodge  
10 particulate matter from an area of the screen while the pump draws liquid through the screen;

wherein the screen and nozzle are arranged for relative movement so that the area of the screen being acted on by the effluent from the nozzle changes as the pump operates.

15

23. A system as set forth in Claim 22 including a pump vault adapted to be disposed within the tank, and wherein the pump is disposed within the vault.

20

24. A system as set forth in Claim 23 wherein the vault comprises a wall having an opening through which liquid in the septic tank enters the vault.

25. A system as set forth in Claim 24 wherein the vault comprises a closed bottom wall and a cylindrical side wall extending upright from the bottom wall, the opening comprises a series of holes in the side wall spaced above the bottom wall, and the strainer is disposed within the vault below the level of the series of holes.

30

26. A system as set forth in Claim 24 wherein the strainer comprises a walled housing and the screen is

stationarily mounted in the walled housing of the strainer and the nozzle is disposed within the walled housing of the strainer and arranged to move relative to the screen.

5        27. A system as set forth in Claim 23 wherein the vault wall encloses the vault such that liquid in the septic tank is constrained to enter the vault through the opening, and the strainer is disposed in covering relation to the opening.

10        28. A system as set forth in Claim 27 wherein the strainer is disposed on the exterior of the vault in covering relation to the opening.

15        29. A system as set forth in Claim 28 wherein the strainer screen is mounted on the vault wall in covering relation to the opening in the vault wall, and the nozzle is disposed within the vault.

20        30. A system as set forth in Claim 29 wherein the strainer screen is stationarily mounted on the vault wall in covering relation to the opening in the vault wall, and the nozzle is arranged to move relative to the screen.

25        ~~31~~. A self-cleaning strainer for use with a septic tank having a pumping system, including a pump, for pumping liquid in the septic tank as effluent to a drain field, the strainer comprising:

30        an enclosure for placement in the liquid to strain certain particulate matter from the liquid before the liquid enters the pump;

the strainer comprising a straining screen for straining the liquid to limiting the size of particulate matter that can pass to the pump and at least one nozzle for receiving some of the effluent pumped by the pump and directing effluent toward the screen to dislodge particulate matter from an area of the screen while the pump is drawing liquid through the screen, wherein the screen and nozzle are arranged for relative movement so that the area of the screen being acted on by effluent from the nozzle changes as the pump operates.

32. A method for limiting size of particulate matter entering the pumping system of a septic tank comprising:

providing a strainer for placement in septic tank liquid wherein the strainer comprises a straining screen for limiting the size of particulate matter that can pass to the pump and at least one nozzle that are relatively movable for enabling the nozzle to move across the screen and emit effluent to dislodge particulate matter in the liquid from an area of the screen;

connecting the strainer to an inlet of a pump so that the pump is constrained to draw septic tank liquid through the screen, thereby straining the liquid before it enters the pump inlet; and

connecting the strainer to an outlet of the pump so that some of the strained liquid is returned to the nozzle to be emitted toward the screen and to impart relative movement to the screen and nozzle.

33. A system for use in pumping liquid from a septic tank as effluent to a drain field comprising:

a pump for drawing liquid from the septic tank and pumping the liquid as effluent to the drain field;

a strainer for straining certain particulate matter from the liquid before the liquid enters the pump;

5 the strainer comprising a straining screen through which the pump draws the liquid; and

a sprayer comprising at least one spray arm that, as the pump draws liquid through the screen, is supplied with some of the effluent from the pump to cause the spray arm to  
10 rotate about an axis transverse to the screen and direct effluent toward the screen to dislodge particulate matter from an area of the screen that continually changes as operation of the pump rotates the spray arm.

15